

REMARKS

Claims 1, 2, 4-13, and 15-30 are pending. Claims 1, 10, and 13 have been amended, claims 3 and 14 have been canceled, and new claims 15-30 have been added to recite additional features of the embodiments disclosed in the specification.

Reconsideration of the application is respectfully requested for the following reasons.

In the Office Action, claims 1 and 2 were rejected under 35 USC § 112, first paragraph, for being single-means claims. Claim 1 has been amended to incorporate the features of claim 3. It is respectfully submitted that this amendment is sufficient to overcome the § 112, first paragraph, rejection.

Claims 10-12 were rejected under 35 USC § 101 for failing to recite statutory subject matter. More specifically, the § 101 rejection is based on the failure of claims 10-12 to recite a tangible result. In this paper, claim 10 has been amended to recite the additional step of “transmitting information from a mobile terminal based on at least one of said real part or imaginary part output according to said least significant bit.” This step is apparent from the spreading step disclosed in the specification, which step is performed prior to transmission of a spread and scrambled signal from a mobile terminal based on the output of switch SW1. (See Figure 2).

Applicants respectfully submit that the transmitting step constitutes a tangible result of the methods defined in claims 10-12. Withdrawal of the § 101 rejection is respectfully requested.

Claims 1, 2, and 13 were rejected under 35 USC § 103(a) for being obvious in view of a combination of the Oggosanusi and Chennakeshu patent publications. Claim 1 has been amended to recite the features of allowable claim 3 and claim 13 has been amended to recite the features of claim 14. Applicants submit that claims 1, 13, and their dependent claims are allowable in view of these amendments.

New claims 15-30 have been added to the application.

Claim 15 recites a method of mapping and spreading data symbols in a mobile communication system. This method includes (a) generating a multiple-bit binary number based on one or more imaginary coefficients output from a data symbol generator; (b) logically combining predetermined bits of the multiple-bit binary number to generate a logical value; (c) logically combining a binary scrambling code, the logical value generated in (b), and one or more real coefficients output from the data symbol generator; (d) mapping a first binary number generated in (c) to a second binary number; (e) selecting the second binary number to correspond to a real part or an imaginary part based on one of the predetermined bits combined in (b); and (f) transmitting information from a mobile terminal based on at least one of said real part or imaginary part. These features are not taught or suggested by the cited references, whether taken alone or in combination.

Claims 16-22 further define the method of claim 16 to include features which are also not taught or suggested by the cited references. Accordingly, it is submitted that these claims are allowable, not only by virtue of their dependency from claim 15 but also based on the features separately recited therein.

Claim 23 recites an apparatus for mapping and spreading data symbols in a mobile communication system. This apparatus includes a data symbol generator to generate one or more imaginary coefficients; a circuit to generate a multiple-bit binary number based on said one or more imaginary coefficients; a first logical circuit to combine predetermined bits of the multiple-bit binary number to generate a logical value; a second logical circuit to combine a binary scrambling code, the logical value generated by the first logical circuit, and one or more real coefficients output from the data symbol generator; a mapper to map a first binary number generated by the second logical circuit to a second binary number; and a selector to select the second binary number to correspond to a real part or an imaginary part based on one of the predetermined bits combined by the first logical circuit. These features are not taught or suggested by the cited references, whether taken alone or in combination.

Claims 24-30 further define the method of claim 23 to include features which are also not taught or suggested by the cited references. Accordingly, it is submitted that these claims are allowable, not only by virtue of their dependency from claim 23 but also based on the features separately recited therein.

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and timely allowance of the application are respectfully requested.

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To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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